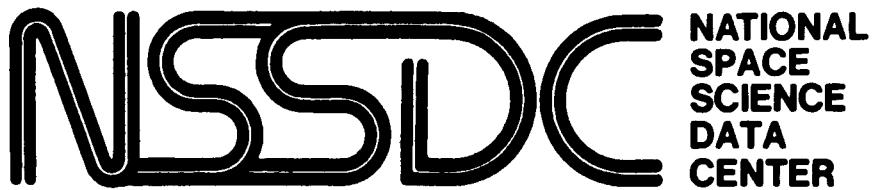


NASA-TM-89692



WORLD DATA CENTER A for ROCKETS AND SATELLITES

86-18

# PROMIS SERIES

## VOLUME 4

### Solar Wind Parameters from IMP 8 Experiment (MIT)

(NASA-TM-89692) PROMIS SERIES. VOLUME 4:  
SOLAR WIND PARAMETERS FROM IMP 8 EXPERIMENT  
(MIT) (NASA) 83 p

N90-70563

Unclassified  
00/92 0251555



National Aeronautics and  
Space Administration

Goddard Space Flight Center

NSSDC/WDC-A-R&S 86-18

**PROMIS SERIES**  
**VOLUME 4**

**Solar Wind Parameters  
from IMP 8 Experiment (MIT)**

**A. J. Lazarus, P. A. Milligan, and J. H. King**

**November 1986**

## FOREWORD

This is the fourth of a series of volumes that are being published by the NSSDC/WDC-A pertaining to the Polar Region Outer Magnetosphere International Study (PROMIS) period, March 29-June 16, 1986. Note that the data plots begin on March 15.

Each plot shows all the available observations of the solar wind parameters made by the MIT solar wind experiment on the IMP 8 spacecraft. Magnetosheath as well as interplanetary data are included; the observations in those two regions may be distinguished by the flow angle of the bulk velocity, as described below. Little if any data from within the magnetosphere are available because the sensitivity of the instrument is generally too low to measure those fluxes.

The plotted parameters were derived by fitting an isotropic, convected Maxwellian function to the peak and two surrounding points of the velocity distribution function. Reading from the bottom, the following variables are plotted vs. time; note that January 1 is day 1.

Bulk Speed

Proton Number Density

Most Probable Thermal Speed: Note the approximately equivalent temperature on the right side of the plot.

Flow Angles: The directions from which the plasma appears to come. Aberration effects caused by the orbital motion of Earth have been removed. There is a bias of 5 degrees from the south in the north-south flow.

Entries into and exits from the magnetosheath (across the bow shock) can be detected by noting large flow angle changes (~ 10 degrees) relative to the nominal interplanetary flow (E/W=0; N/S=5 degrees S.). The 15 bow shock crossings encountered and the corresponding PROMIS period predictions listed in Volume 1 of this PROMIS series (note the good agreement) are:

	<u>Day/Hour of Crossings Observed in Plasma Data</u>	<u>Day/Hour of Predicted Crossing</u>
1)	Between	73/12 and 74/06*
2)		82/04
3)		86/07 (10?)
4)		94/15
5)	Between	98/19 and 99/00*
6)	Multiple	106/19, 107/04
7)	Between	111/13 and 112/00*
8)		119/19
9)		124/10
10)	Between	132/22 and 133/18*
11)		137/08
12)		145/16
13)	Between	149/15 and 149/18*
14)	Multiple	158/00, 158/04
15)	Between	161/14 and 162/08*

(\*Crossing occurred during data gap)

